

The effect of dietary calcium on soluble faecal phosphorus in dairy cows

M. Nordqvist, R. Spörndly, K. Holtenius and C. Kronqvist

Swedish University of Agricultural Sciences, Department of Animal Nutrition and Management, Kungsängen Research Centre, SE-753 23 Uppsala, Sweden

AIM

To evaluate the effect of different levels of calcium on faecal excretion of soluble phosphorus.

CONCLUSIONS

Addition of calcium to dairy cow diets resulted in a smaller fraction of the faecal phosphorus in soluble form. This is a method that may reduce environmental pollution.

INTRODUCTION

Phosphorus (P) in dairy cow faeces is an environmental issue because of the eutrophication it causes in waters. Soluble P (sP) is labile and most susceptible to leakage. Earlier studies have shown an effect of dietary calcium (Ca) level on sP in faeces (Chapuis-Lardy *et al.*, 2004).

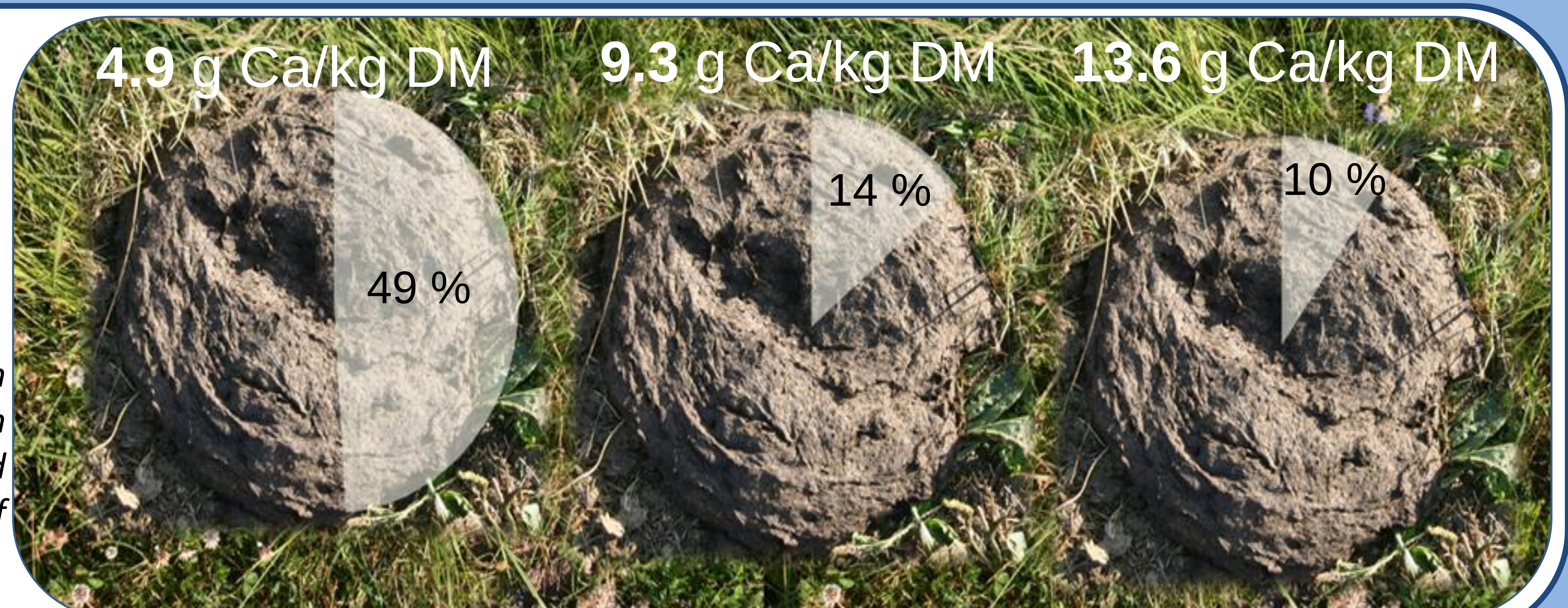
MATERIALS & METHODS

Pregnant dry cows (n=29) were fed a diet with 3.7 g P/kg DM. Each cow was fed one of three different levels of limestone. Faecal samples were analysed for soluble P by water extraction and total faecal P (TP) by plasma emission spectrometry.

RESULTS

Dietary Ca-level affected the proportion of faecal sP even though it had no influence on faecal TP.

Figure 1. Proportion soluble P of total P in faeces from cows fed different amounts of Ca.



REFERENCES

L. Chapuis-Lardy, J. Fiorini, J. Toth, and Z. Dou. 2004. Phosphorus concentration and solubility in dairy feces: variability and affecting factors. *J. Dairy Sci.* 87:4334-4341